Draft RAOs Precepts Consistent with Guidance

Project RAOs should be consistent with several key precepts from guidance:

1. RAOs should be consistent with the site Conceptual Site Model (CSM). That means they address contaminated media (sediment, soil or water), exposure pathways and receptors that are part of the CSM.[1]

2. No RAOs are required for exposure media, pathways and receptors for which the risk assessments conclude there is no unacceptable risk.[2] (We understand that EPA has not yet seen the risk assessments, but potential RAOs in this category should be a least tabled until EPA has seen the draft RAs.)

3. RAOs are only established for objectives that are achievable from the site cleanup, as distinguished from regional goals that require additional actions outside of the CERCLA action[3].

4. RAOs and PRGs should be consistent with the methodology of the risk assessments and the tools established in the RI/FS to develop PRGs.[4]

5. ARARs follow from RAOs. PRGs are developed based on RAOs, and PRGs are established based on either risk assessment or ARARs. Potential ARARs are at first tentatively identified, based on the RAOs. In this case, potential ARARs were used as screening values in the risk assessment. These potential ARARs must then be re-evaluated for relevance and appropriateness based on the results of the risk assessment. This means some will be carried forward as chemical-specific ARARs and others will not.[5]

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[1] Contaminated Sediment Remediation Guidance (EPA December 2005), §2.4,1 at 2-15: "RAOs are typically derived from the conceptual site model, and address the significant exposure pathways."

[2] Contaminated Sediment Remediation Guidance (EPA December 2005), §2.4,1 at 2-15: "RAOs . . .address the *significant* exposure pathways. . ." and "[t]he development of RAOs should include a discussion of how they address *all the unacceptable human health and ecological risks* identified in the risk assessment." (Emphasis added.)

[3] Contaminated Sediment Remediation Guidance (EPA December 2005), §2.4,1 at 2-15: "When developing RAOs, project managers should evaluate whether the RAO is achievable by remediation of the site or if it requires additional actions outside the control of the project manager. For example, complete biota recovery may depend on the cleanup of sources that are regulated under other authorities. The project manager may discuss these other actions in the ROD and explain how the site remediation is expected to contribute to meeting area-wide goals outside the scope of the site, such as goals related to watershed concerns, but RAOs should reflect objectives that are achievable from the site cleanup."

[4] Contaminated Sediment Remediation Guidance (EPA December 2005), §2.4,1 at 2-16: "The development of the sediment RGs may involve a variety of different approaches that range from the simple application of a bioaccumulation factor from sediment to fish or more sophisticated food chain modeling. The method used and the level of complexity in the back calculation from fish to sediment should be consistent with the approaches used in the human health and ecological risk assessments."

[5] 40 C.F.R. 300.430(e)(2)(i) directs EPA to "establish remedial action objectives specifying contaminants and media of concern, potential exposure pathways and remediation goals. Initially, preliminary remediation goals are developed based on readily available information, such as chemical-specific ARARS

6. RAOs are intended to be initially no more specific than needed and refined throughout the RI/FS process. Consequently, phrasing such as "to the extent practicable" should be considered for surface water RAOs, where other non-CERCLA related sources are known to exist.[6]

or other reliable information. Preliminary remediation goals should be modified, as necessary, as more information becomes available during the RI/FS."

[6] Guidance for Conduction Remedial Investigations and Feasibility Studies under CERCLA p. 4-7: "The objectives should be as specific as possible but not so specific that the range of alternatives that can be developed is unduly limited." Also, Table 3-12 of this document calls for reporting and communication of "Refined Remedial Action Objectives".